

User Manual



SCANIFY F3D2001

Version 2.0

Revision Date: 2015.8.18

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SCANIFY Profile

SCANIFY® is a handheld, point-and-shoot 3D scanner built to enable consumers and professionals to 3D scan objects in high-resolution shape and color in a tenth of a second.

- **Software** - SCANIFY comes with **Fuel3D Studio software**, which allows scans to be manipulated and exported as popular file formats for 3D printing and on-screen applications (.STL, .OBJ, .PLY). All versions of Fuel3D Studio are created to be as easy to use as possible, with a simple, intuitive user interface that can be installed on both PC (currently available) and Mac (coming in late 2015).

- **Minimum hardware specification:**

For the best performance we recommend running a later i3, i5 or i7 processor

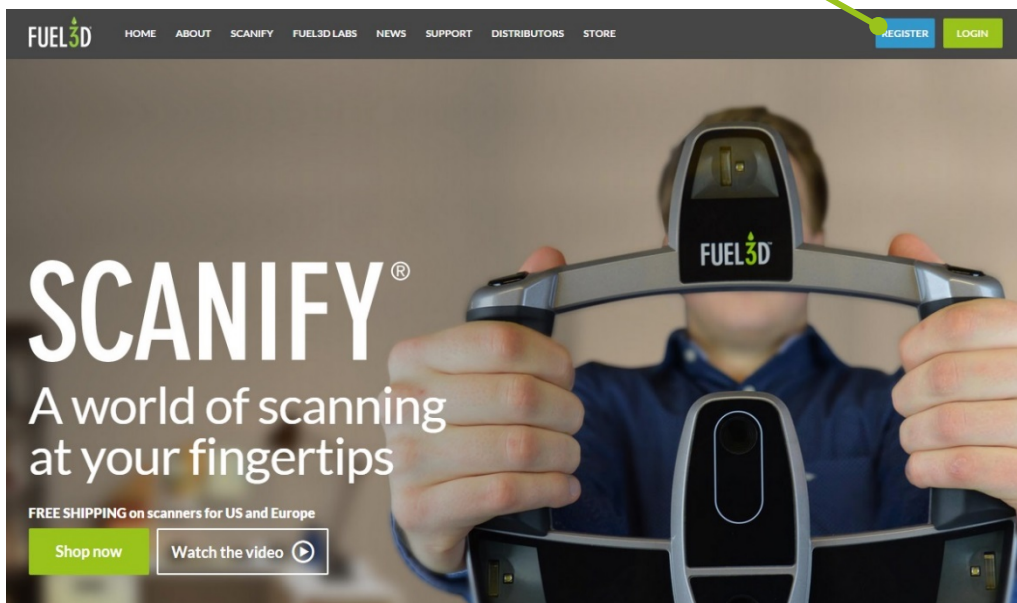
- o **Studio Starter** - 2GB RAM, 1GB hard disk space, Dual-core processor.
 - o **Studio Plus** - 6GB RAM, dual-core 64bit CPU 2GHz, dedicated graphics card.
 - o **Studio Advanced** - 10GB of RAM, Quad-core 64bit CPU 2.3GHz, dedicated graphics card.
- **Recommended hardware specification:** 12 GB RAM, 500 GB hard disk, Intel i7 or better processor, dedicated graphics card.
- **Operating system support:** Studio2 has been tested on Windows 7, 8, 8.1 and 10. For the advanced versions of Studio an x64 version of Windows is required.
- **Object specifications:**
 - o SCANIFY is the perfect solution for quickly capturing 3D models of:
 - The human form
 - Fabrics
 - Stone and masonry
 - Wood carvings
 - Stone sculptures
 - Plants and trees
 - o Ideal objects for scanning include the following characteristics:
 - Gently contoured surface with soft curves
 - Varying color
 - Matte, non-shiny surfaces
 - Opaque
 - o Objects with the following characteristics may **not** be suitable for scanning:
 - Cavities or protrusions
 - Very dark/black items
 - Mono-color with no texture
 - Reflective or shiny
 - Transparent
 - Sharp edges and corners



Set-up

Registering your device and locating your serial number

Go to our web site www.fuel-3d.com and select Register



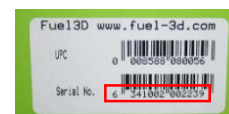
The serial number of your scanner can be found on your SCANIFY box as well as on the back of the scanner itself.

Find your serial on your scanner:



Example: 6341002002208

Find your serial on your box:



Example: 6341002002239



Note:

- If you are having problems registering your account please contact support at: fuel3D.zendesk.com.

Once registered you will have access to the user portal where you can download software, check your product licenses and access support.

The screenshot shows a user portal dashboard. At the top, there are four navigation tabs: 'My Account' (selected), 'Licenses & Software', 'Help & Support', and 'Products & Invoices'. On the left side, under 'My Account', there is a user profile section with a placeholder for a profile picture, the text 'USER Name', and fields for 'Delivery Address' and 'Billing Address'. Both addresses are listed as 'Unit 2, Douglas Court, Seymour Business Park, Station Road, Chinnor, OX39 4HA, AX'. Below these is the 'Email Address' field with 'email@mail.com' and two buttons: 'Edit profile' and 'Log out'. On the right side, under 'Recommended Products', there are two product cards. The first card is for the 'SCANIFY Handheld 3D Scanner System', showing an image of the scanner and a price of '€ 825.0' with a 'Quick buy' button. The second card is for 'SCANIFY Scanner Targets', showing an image of the targets and a price of '€ 15.00'.

Setting up your scanner

Software Installation

In the portal choose licenses and software and download Fuel3D Studio

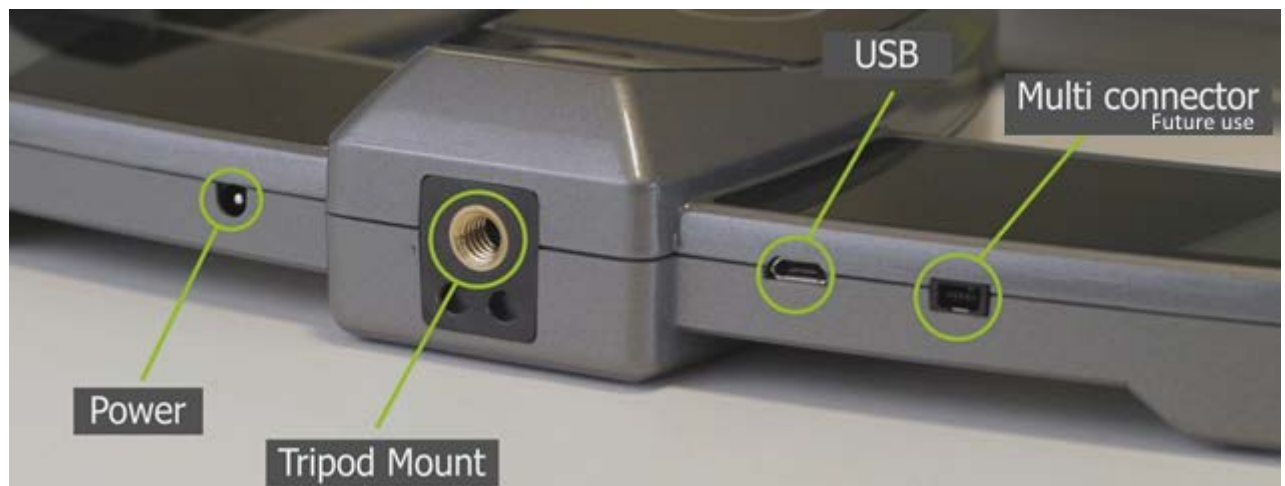
The screenshot shows the 'Licenses & Software' section of the user portal. At the top, there is a navigation bar with the 'FUEL3D' logo and links to 'HOME', 'ABOUT', 'SCANIFY', 'FUEL3D LABS', 'NEWS', 'SUPPORT', 'DISTRIBUTORS', and 'STORE'. On the right side of the navigation bar, there is a 'HELLO SIMON' greeting and a 'BASKET: 11 ITEM CHECKOUT' link. Below the navigation bar, there are four tabs: 'My Account', 'Licenses & Software' (selected), 'Help & Support', and 'Products & Invoices'. The 'Licenses & Software' section is divided into two main areas. On the left, there is a section for 'Active Licenses' with the text 'You have no active licenses' and a section for 'Available Licenses'. On the right, there is a section for 'Serial Numbers' with a list of serial numbers (one is visible: '634') and a button to '+ Add Serial'. Below this is a section for 'Software Downloads' with the text 'This software is required to operate your Fuel3D scanner and to import, crop and save scan files.' and 'Operating Systems: Windows 7 and Windows 8 Pro'. There is a button to 'Download Fuel3D Studio'. A green arrow points from the text 'Software Download' to this button. At the bottom of the section, there is a disclaimer: 'By clicking on the download link you acknowledge that you have read and accept our End User License Agreement'.

Once the download has finished run the installation wizard. We recommend disabling any anti-virus software and running the installer with administration rights during installation.

Getting connected

The scanner requires two connections (included) to acquire a scan:

- 2.0 Micro USB to USB data cable
- 5V Power adapter



Both connections attach at the bottom of the scanner.



Select the appropriate power adaptor for your region.

Plug the power adaptor into a wall outlet and the other end into the scanner. Plug the USB into the scanner and your PC.

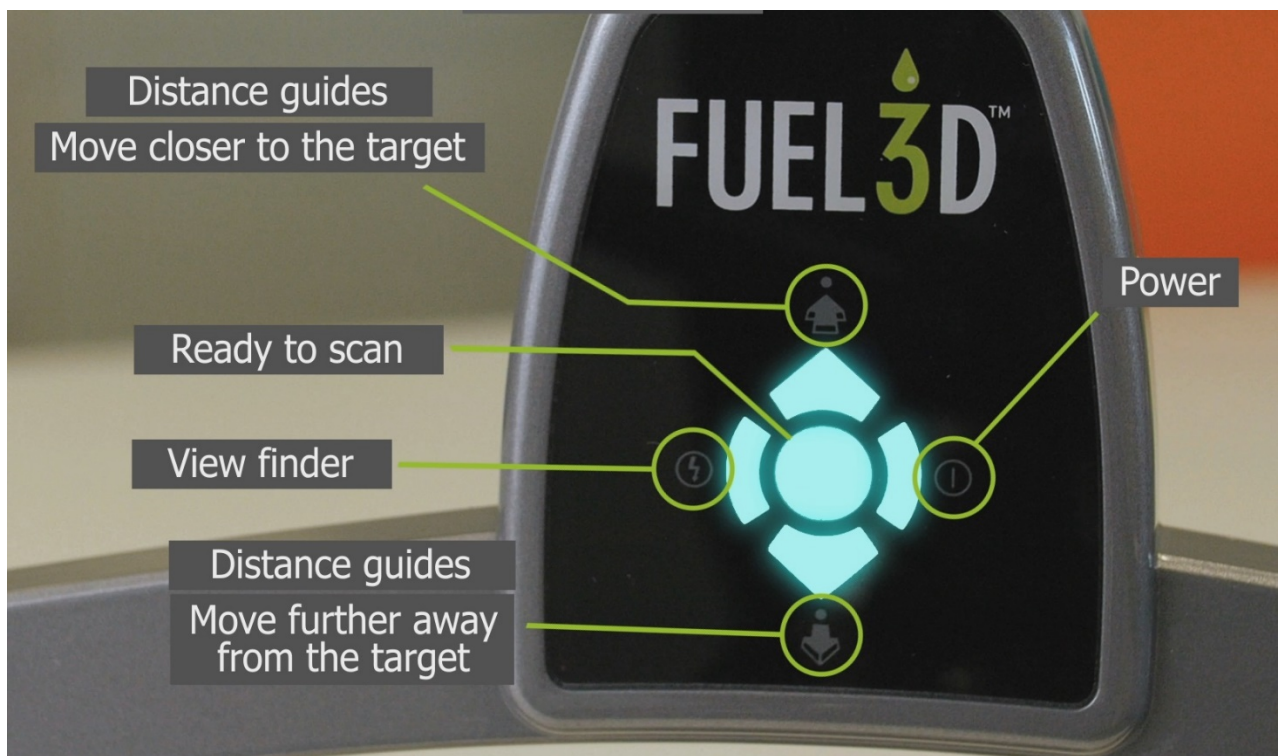
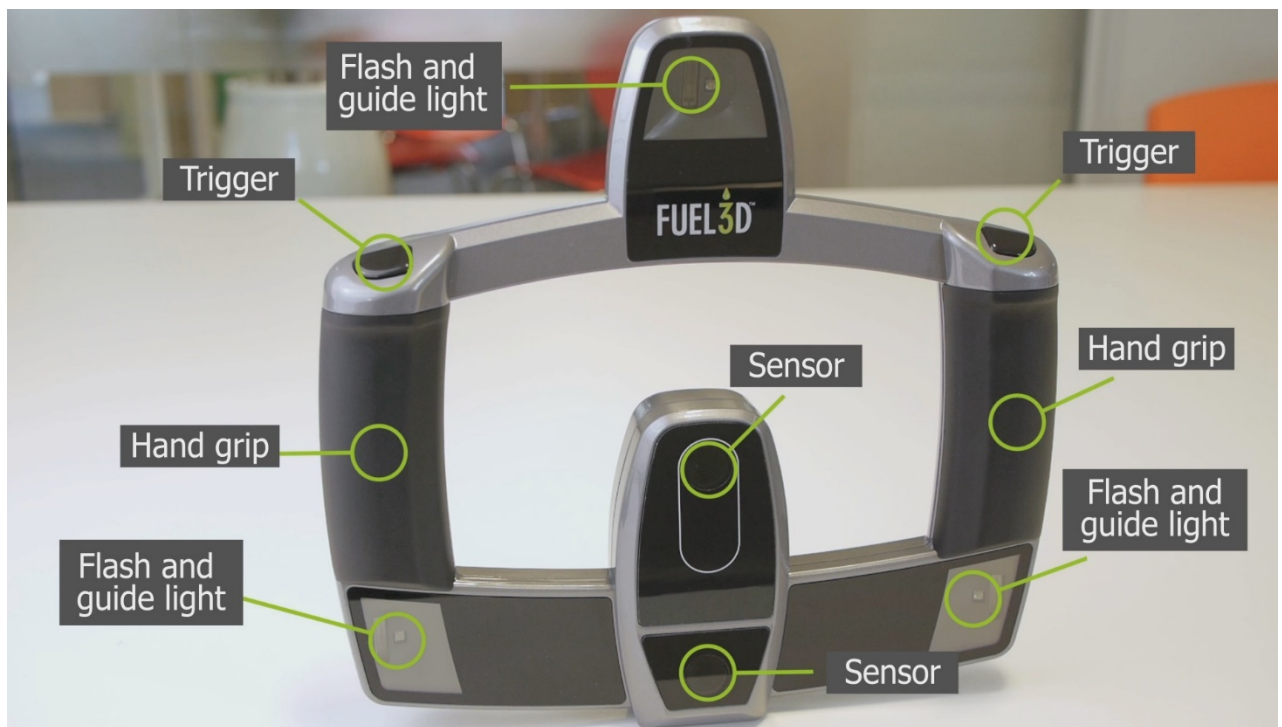
Once plugged into a computer Studio will automatically install the device drivers.



Note:

- Device drivers must be installed before opening Fuel3D Studio, this may take several minutes the first time a new scanner is connected.

Identifying Parts of the Scanner



Taking Care of Your Scanner

Don't



Get it dirty

Always ensure your scanners lenses and flashes are clean and free of dirt, grease fingerprints, dust Etc. This can affect your data quality and cause scans to fail in processing.



Spill water on it

Never spill water on your scanner.



Drop it

Never drop, hit or impact your scanner, this can degrade the calibration.

Do

Protect it when travelling

Always protect your scanner when traveling. Protect your scanner with the Fuel3D scanner pouch.



Keep it clean

Always keep the lenses and flashes clean. This can be done using the Fuel3D lens cloth.



Keep the targets in good condition

Always ensure that your targets are in good condition. Using targets that are scratched, bent or deformed can affect the data quality.





Taking Your First Scan

Selecting a suitable subject

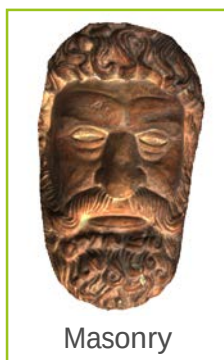
Some subjects may work better than others and we encourage experimenting with a wide variety of items to get an understanding of what scans best.

Below are examples that can help you decide whether a subject is suitable to scan.

Subjects that work well:

-  **Gently contoured surface with soft curves**
-  **Varying color**
-  **Matte, non-shiny surface**
-  **Opaque**

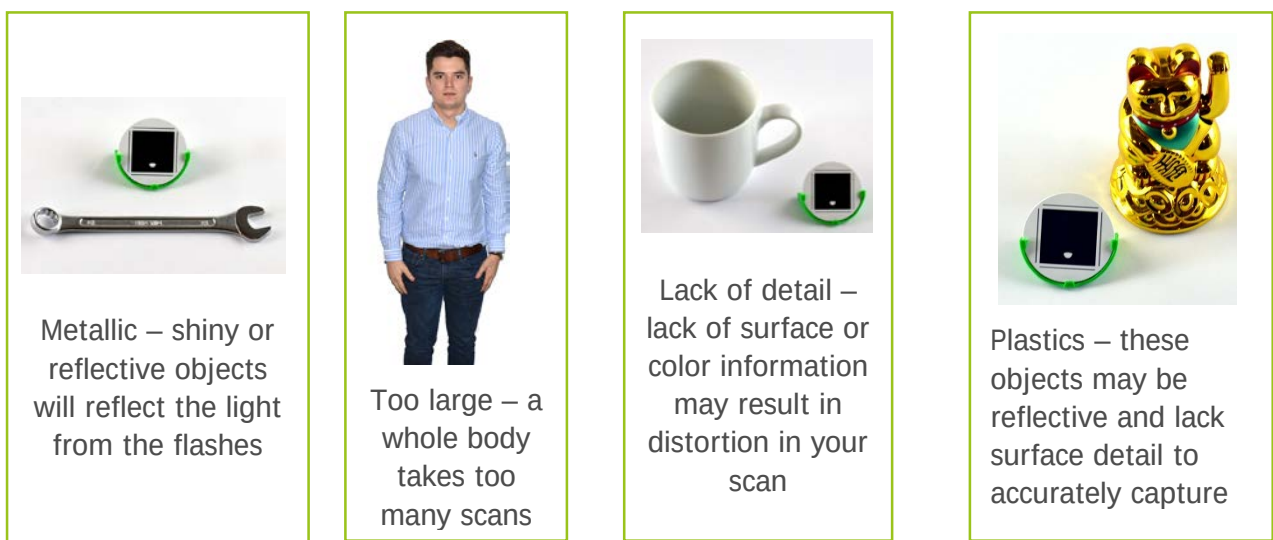
Examples that work well:



Subjects that may not work well:



Examples that may not work well:



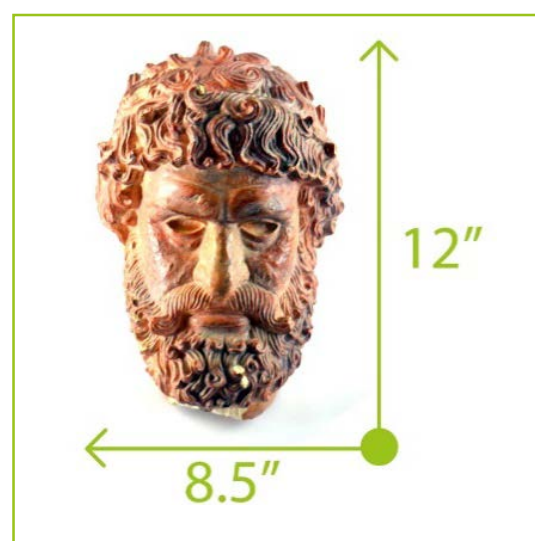
Utilizing the targets

Placement of the target

It is important to understand the scanners' capture area when selecting a subject and while scanning.

The scanner is able to capture a subject that is around 37cm/14.5" diagonal. If your subject is larger than this, multiple scans may be taken and then stitched together to create a 3D model.

The target also ensures that you are within the correct range of the subject you are scanning.

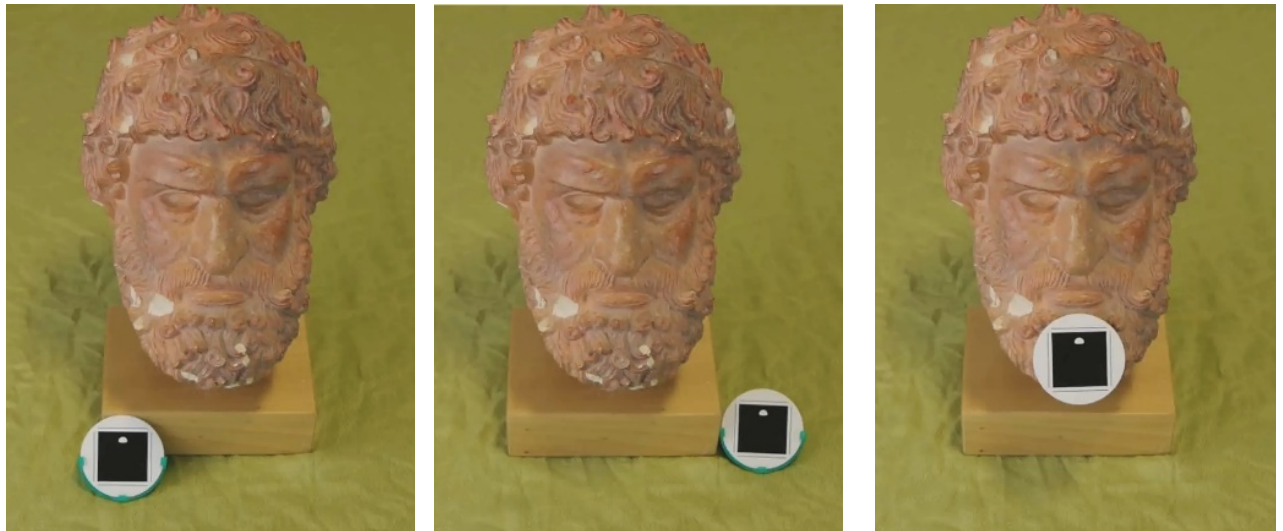


Scanning an inanimate subject:

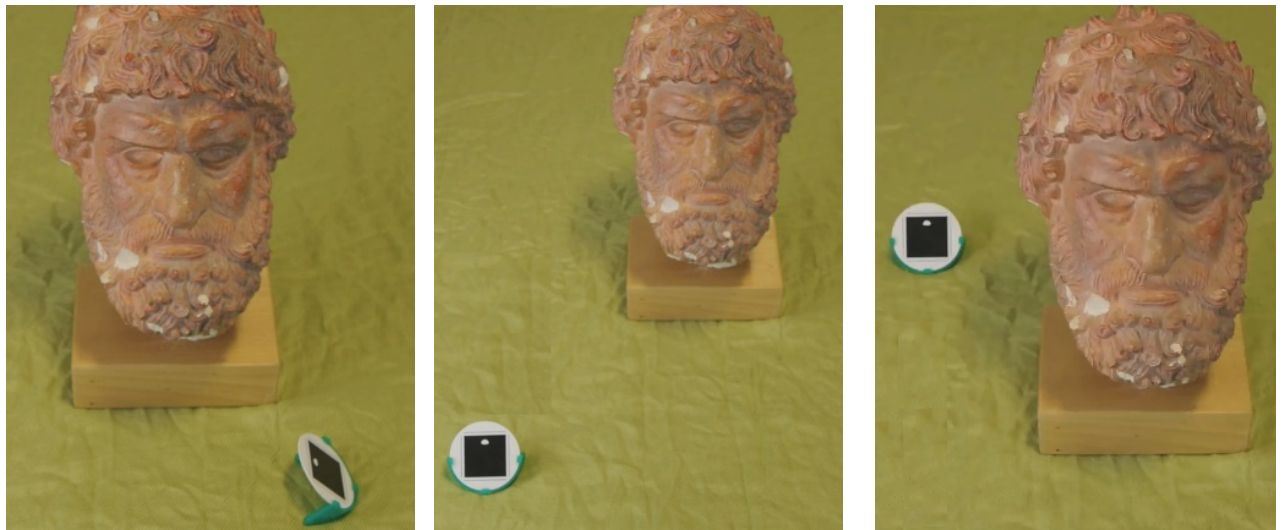
The target can be placed on the subject or to the side using, for example, the free standing target holder.

It is important that the target is always facing towards the scanner.

You should not attempt to duplicate the target as this will cause errors when processing your scans. Additional targets can be purchased from www.fuel-3D.com



Good Target Positioning



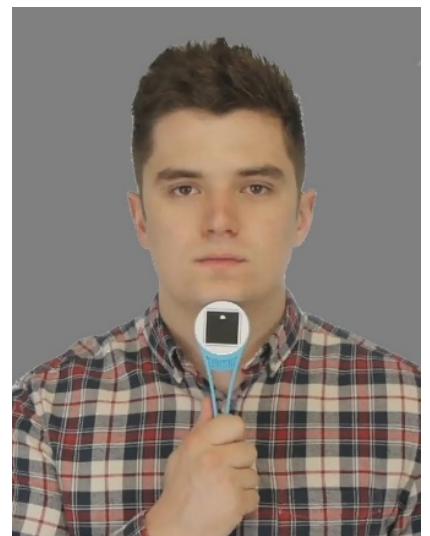
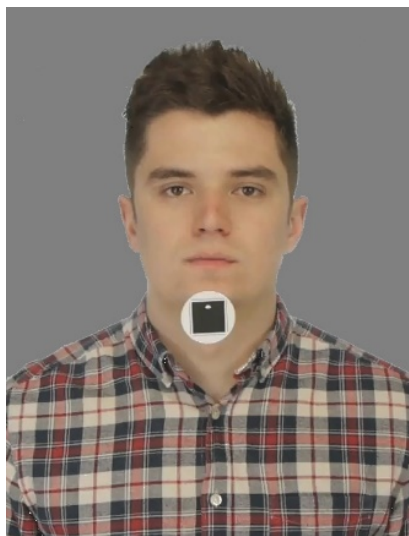
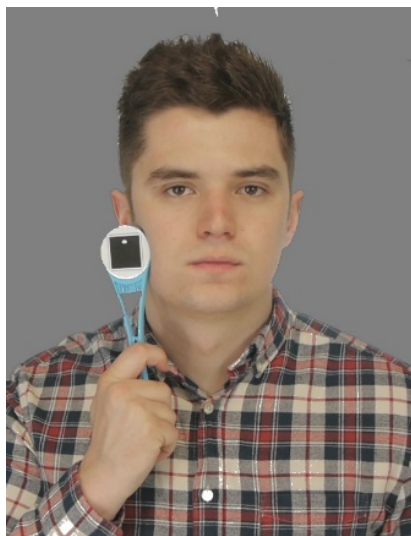
Bad Target Positioning

Scanning a live subject:

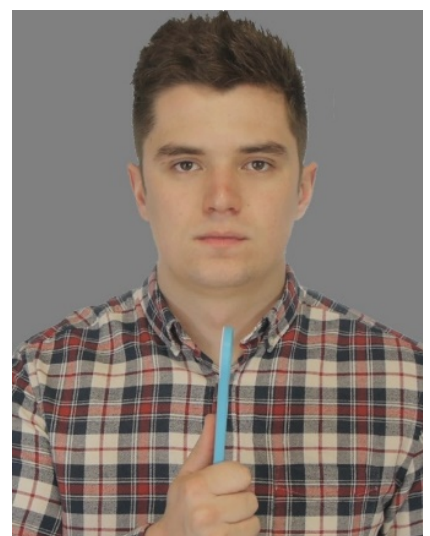
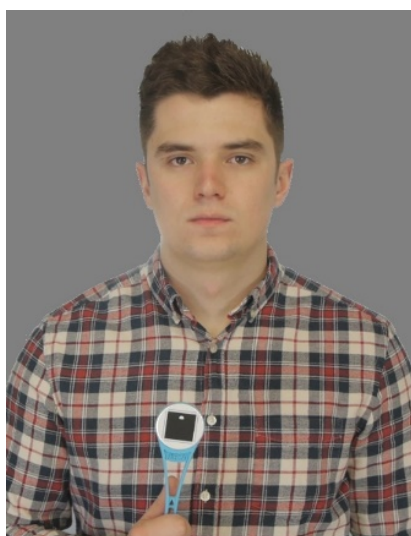
Place the target so that it is touching the subject. This ensures that the target moves in relation to the subject which will reduce the chance of generating a poor quality scan. When scanning a persons' face it is advised to use the handheld target holder and place it against the chin.

WARNING

Epilepsy Caution: The Fuel3D Scanner incorporates flashing lights which may affect individuals who have photosensitive epilepsy or other such conditions. Users must accept full responsibility.



Good Target Positioning



Bad Target Positioning



Tip:

- Don't worry if the target blocks part of your scan, you can crop it out later.
- You may need to experiment with the target in different positions depending on what subject you are scanning.

To assist with the positioning of the targets you can download for 3D printing two target holder types from the customer portal:



Handheld target holder

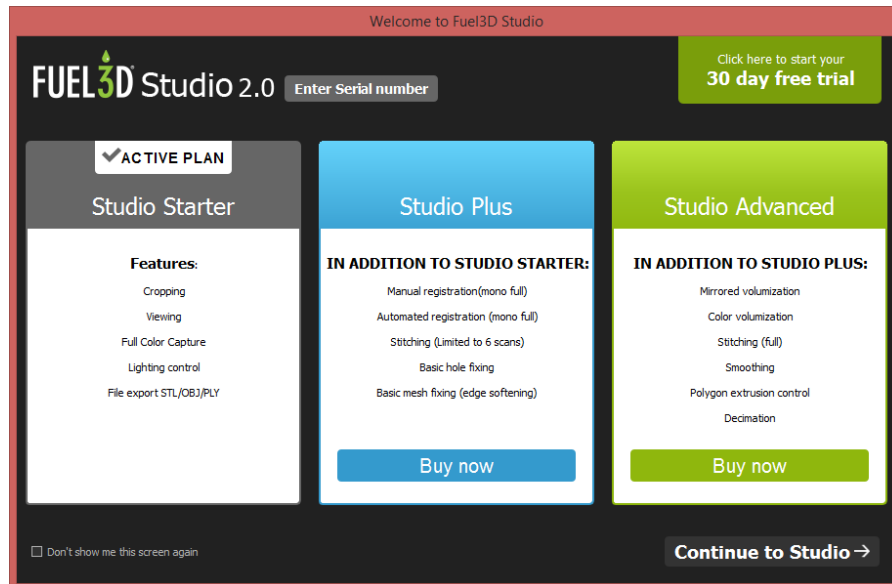


Free-standing target holder

Acquiring a scan with Fuel3D Studio

First Time Launching Fuel3D Studio

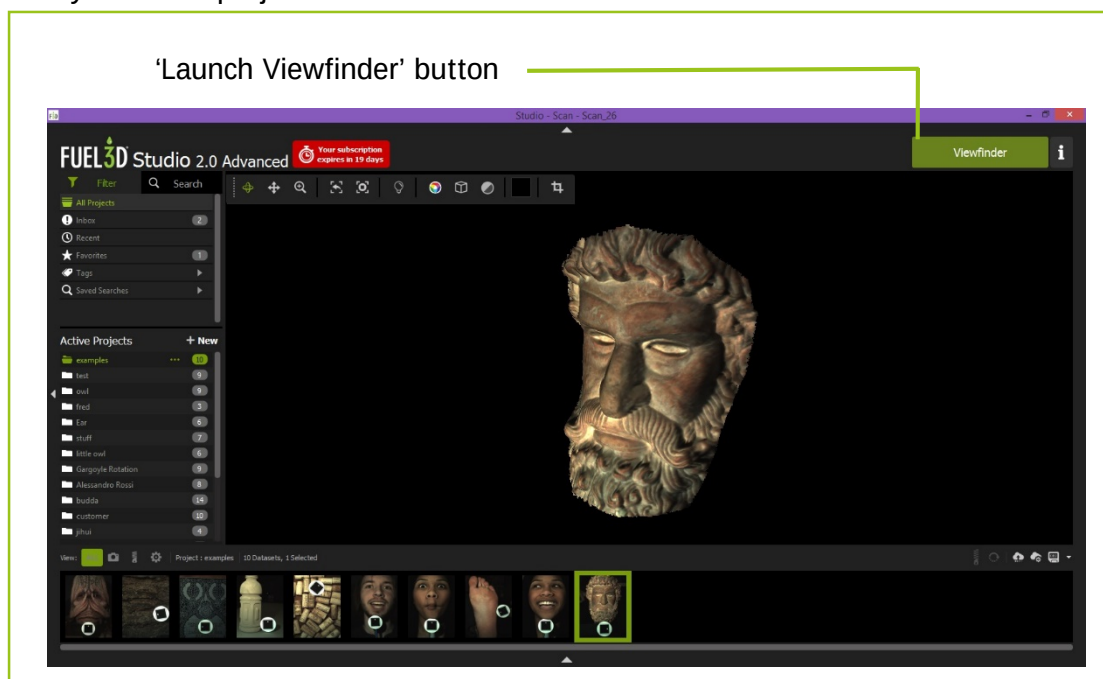
When you first launch Studio 2.0 it will ask if you wish to add additional functionality, this can be deactivated by selecting the checkbox at the bottom left corner of the dialog.



You can activate a one-time only free trial of any of the advanced features at any time.

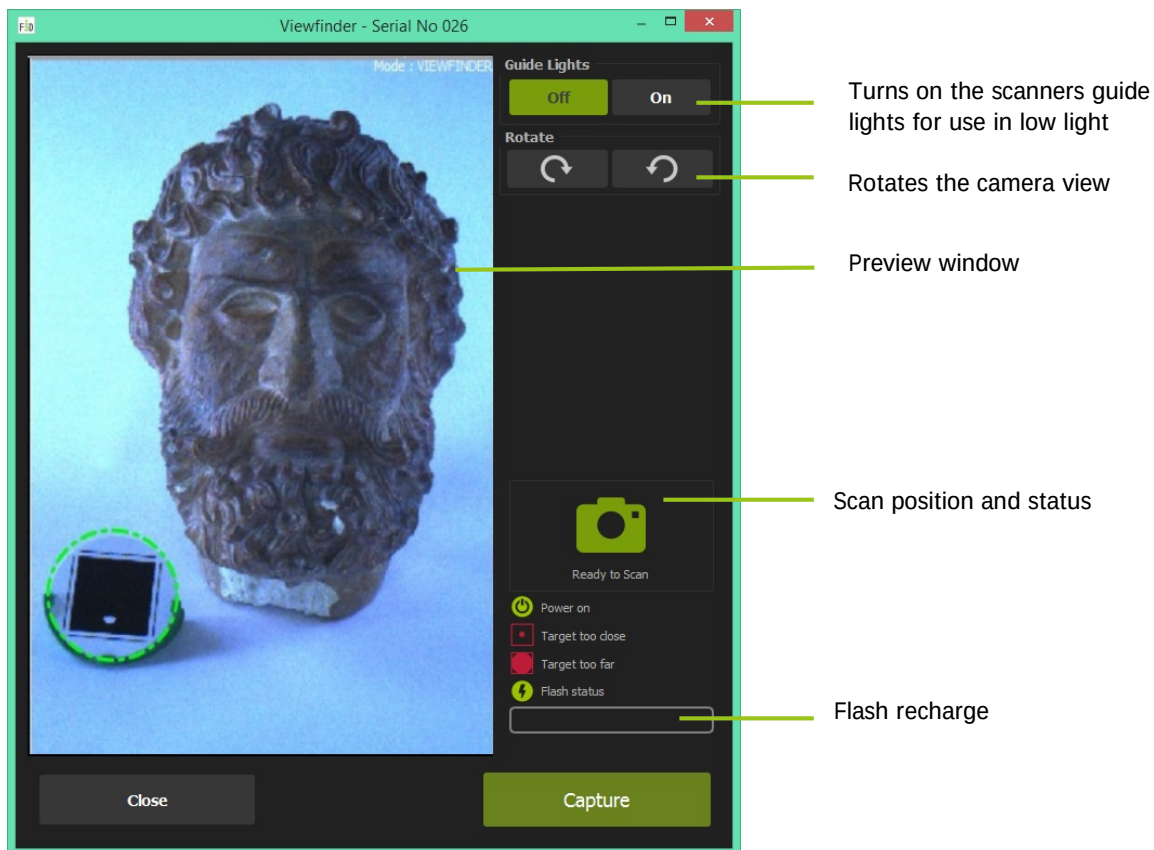
Launching the Viewfinder

You can open the Viewfinder by selecting the 'Launch Viewfinder' button that is located below your list of projects.



The Viewfinder will then display a live view from the scanner.

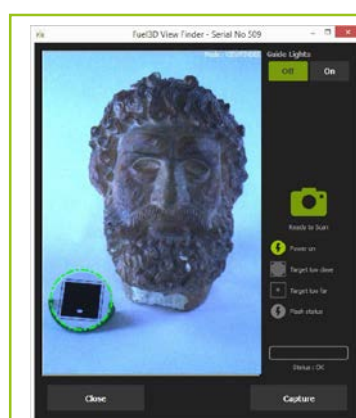
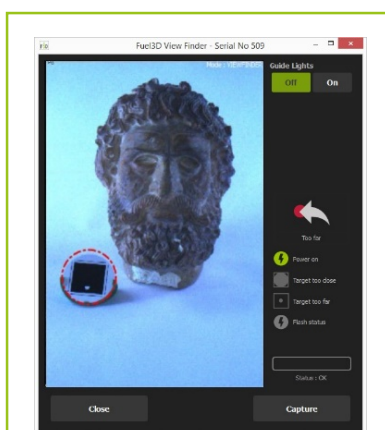
The Viewfinder



Target tracking in the Viewfinder

The target is required to take a scan. The Viewfinder has a tracking capability and displays to you, via a ring around the target, the distance that you are away from the subject.

There are various methods of feedback in the viewfinder to correctly position the Scanify, the target highlight color and the changing status icon on the side of the viewfinder.



Ideal conditions for scanning would be indoors with standard home or office lighting. If lighting is too dark you can use the guide lights. These are on by default whilst scanning but can be toggled 'Off' or 'On' within the Viewfinder interface.



Ensure there are no lights or reflected lights in the scan capture area. Shiny objects, such as jewellery, may also cause problems.

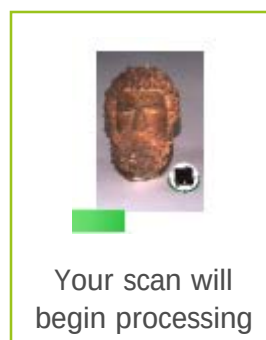
Capturing your scan

A scan can be captured once the scanner is in range of the target. To capture a scan you can depress either of the triggers or click on the 'Capture' button in the viewfinder.

If you cannot properly see the item or the system is having a problem locking onto the target you can half depress the scan button on the scanner. This will turn on the scanners own lights and enable the scanner feedback.

Once a scan is captured a preview will be displayed in place of the live view. You can then select whether to save or discard the scan.

Selecting 'Save' will begin the processing of the scan and will refresh the live view. You won't be able to view the scan until processing is complete. You can see the progress of the processing via the timer in the lower pane, below the scan preview thumbnail.



Note:

- Once a scan has been taken, it will take 30 seconds for the flashes to cool down before you can take another scan. This is shown by the progress bar at the bottom of the Viewfinder.



Hardware

Connections

To function the scanner requires two connectors (included):

- 2.0 Micro USB to USB data cable
- 5V Power Adapter



Both connections attach at the bottom of the scanner

Select the appropriate power adaptor for your region. Plug the power adaptor into a power outlet and the other end into the scanner. Plug the USB into the scanner and your PC.

Once the scanner is plugged into your computer it will automatically install device drivers.

Additional connections

1/4-20 UNC internal thread for screw tripod mounting.

Accessories connector (future accessories TBA).



Note:

- The first time the scanner is plugged into your PC the drivers may take several minutes to install.

Flashes

There are three light housings, one in each corner of the scanner. Each housing contains a guide light, which can help illuminate the target and subject, along with a flash module which is used during capture and processing.

The three flashes are used to illuminate the subject from three different positions during a capture. This process takes less than 1/10th of a second.

Cameras

The scanner uses a stereo camera set-up located in the centre of the scanner.

The central camera is utilized while using the viewfinder.

Tip:

- Ensure that your camera lenses are clean.

The SCANIFY should be held with the cameras and flashes facing towards the subject.

Tip:

- Ensure your hands are not covering the flashes while taking a scan.



Holding the scanner and using the trigger buttons

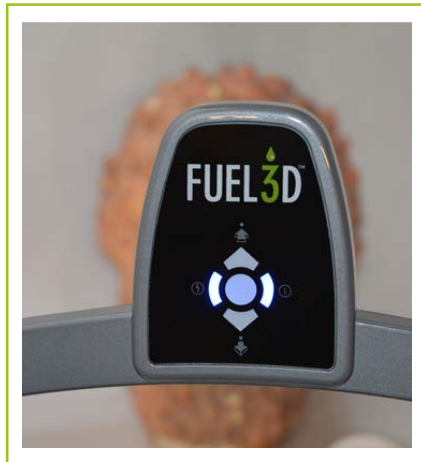
Half press the trigger buttons to prepare for scanning. This will also turn on the guide lights to assist in target location.

Note:

- Only one trigger is required to be pressed to take a scan. It is recommended to use both as this helps to stabilize the SCANIFY and reduce the risk of poor quality scans.

LED indicators

The indicator LEDs face towards you while taking a scan.



The right LED will illuminate while the scanner is receiving power.

The left LED will illuminate when the Viewfinder is running on the computer.

The top and bottom LEDs can be used to help track the target by providing you with feedback of when the scanner is in range.

To activate the tracking LEDs the trigger buttons must be half-pressed.

As long as the target is in view they will provide guidance on the proximity of the scanner to the target.



If the bottom LED flashes you must move away from the target



If the top LED flashes you must move closer to the target

When you reach the correct range from the target then all LEDs will light-up.

The left LED indicates if the flash cool-down is active. If will flash rapidly if the flashes are still in the cool down period and the trigger is depressed.

Once the flash cool down period is complete the LED will become solid blue and your scanner will be ready to take the next scan.



When all LEDs light up you are ready to scan



Note:

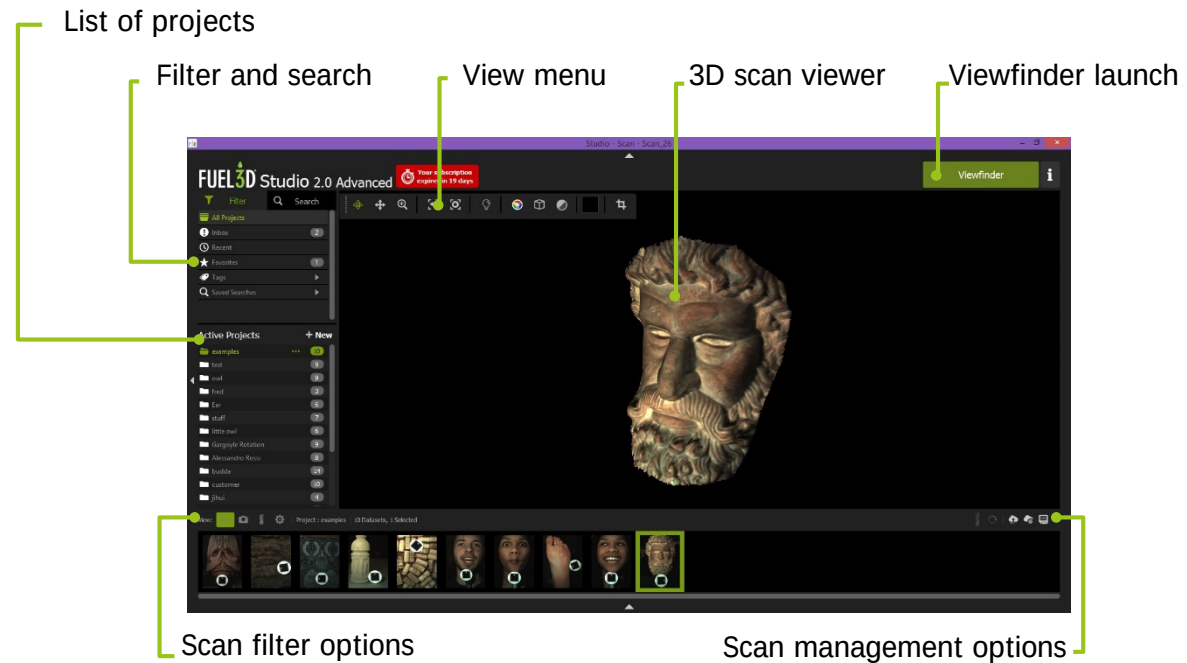
- If the left LED indicator flashes slowly while the target is in range and you are unable to take a scan please contact support at: [fuel3D.zendesk.com](https://fuel3d.zendesk.com).



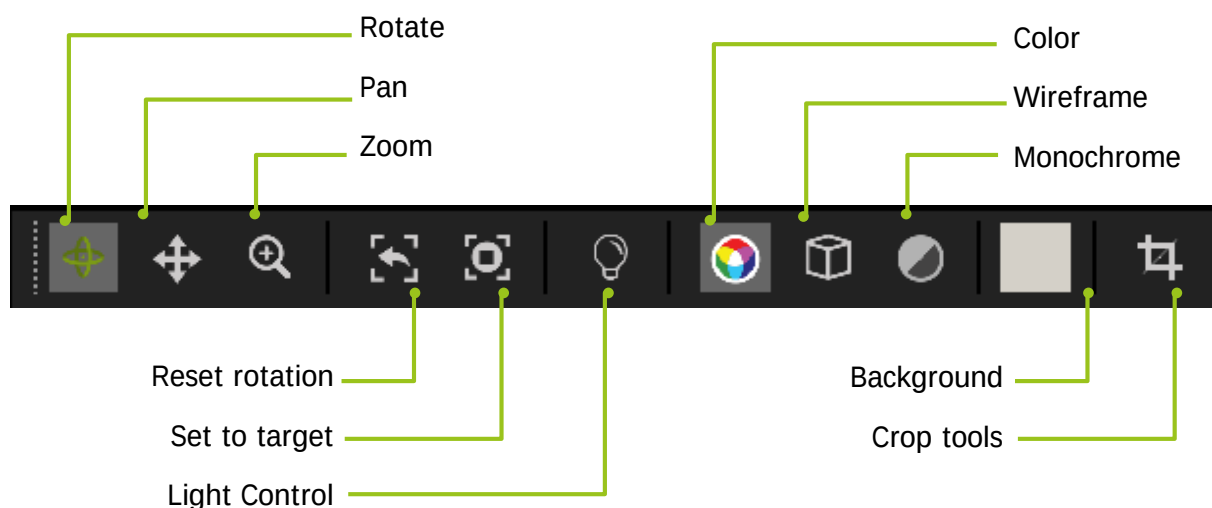
Software

Navigating Fuel3D Studio

The Fuel3D Studio interface



The View Menu



Tip:

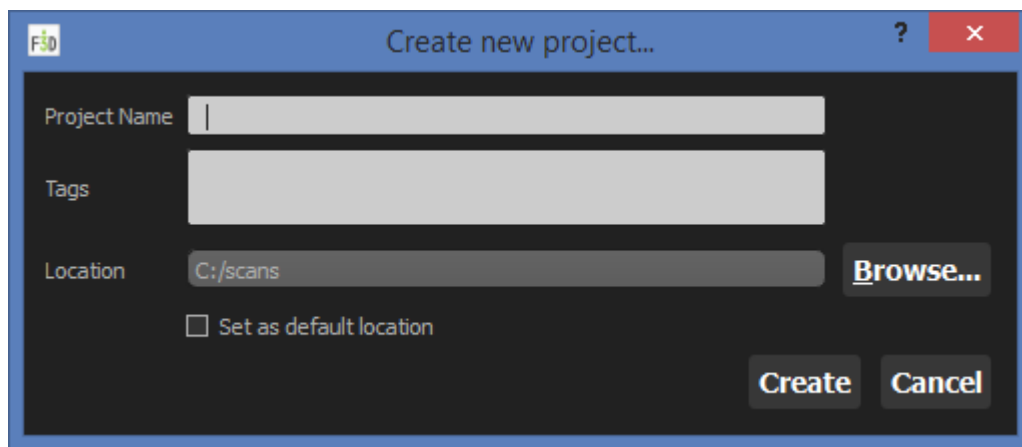
- Whilst Rotate is selected the left mouse rotates, the scroll wheel depressed pans and zooms when scrolled.

Creating Projects

Projects are where you wish to store your scans. We would recommend that you create a project for each group of scans. You can then add tags to associate more information.



To create a new project select the new icon and complete the dialog



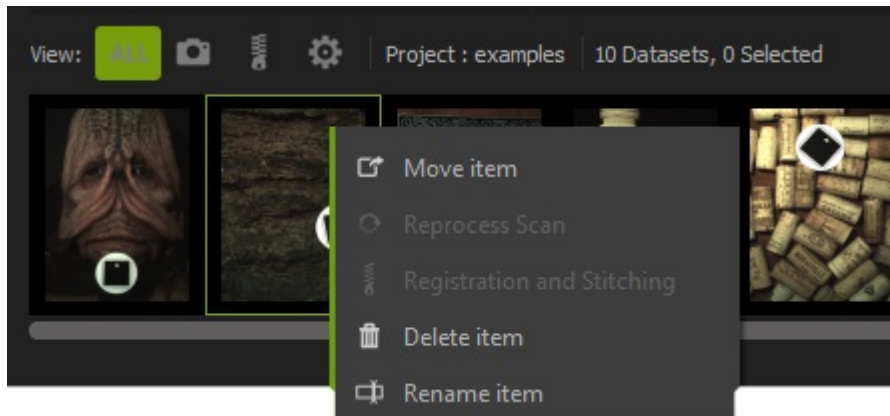
Tip:

- Tags enable you to add additional searchable information with the scan for example the subject or location where the scan was taken.

Your scans are saved within projects. You can create an unlimited number of Projects (dependent on your storage space).

File Management

To access the tools to Move, Delete, Rename, Reprocess and Stitch files together use the left mouse button to access the sub menu that will appear when the mouse is over the scan



you wish to work with. When you choose to move an item a pop-up will appear that will ask what project you wish to move the scan to.

Reprocessing allows you to re-apply the 3D algorithms to the raw scan data. This will enable scans to be

updated and improved as the 3D processing improves.



Note:

- When you delete a scan it is NOT placed in the recycle bin it is immediately removed!

The lower pane window

The lower pane is where you can browse and select your scans once you have selected a scan in a project. Once selected they will open in the built-in 3D viewer.

You can use the tools on the Right of the toolbar to export and stitch scans

File save STL, PLY and OBJ

Publish File

Registration and stitching
(optional add-in)

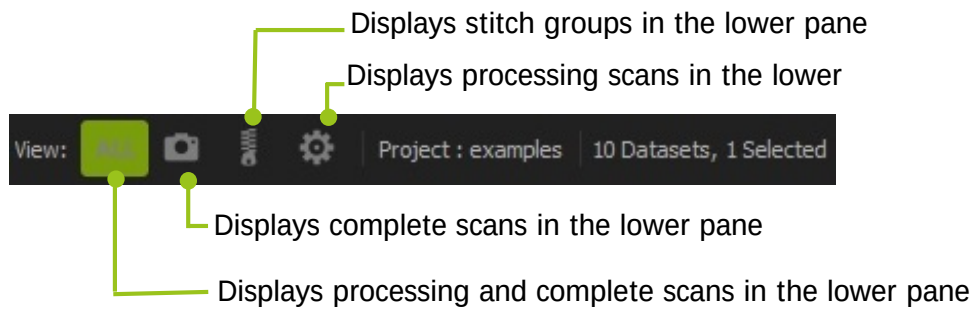
Configure export/publish



Reprocess selected scan

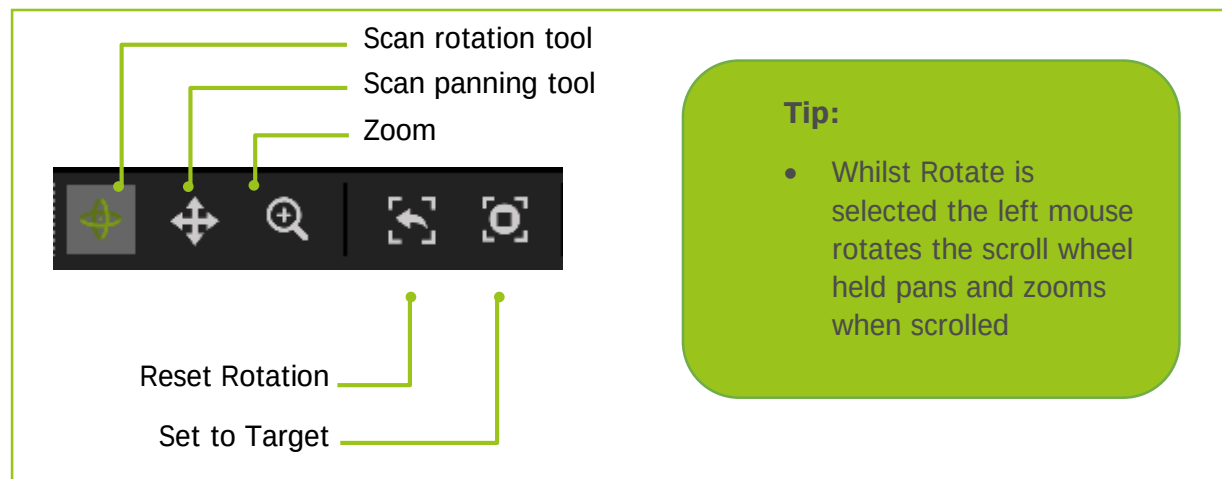
View publishing

You manage your scan display using the tools on the left of lower toolbar



View Control

The basic controls are rotating, panning and zooming.



Note:

- Rotating your scan in the 3D view will not alter the orientation after exporting from Studio.

Acquiring a scan

To acquire a scan click on the 'Viewfinder' button.

In the viewfinder, once the target is locked on and highlighted green, you can capture a scan.

This is accomplished by pressing either one or both of the trigger buttons or by clicking the 'Capture' button in the Viewfinder.



Holding the scanner and using the trigger buttons

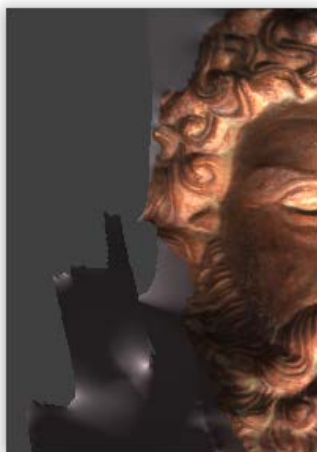
Once a scan has been taken it will take 30 seconds for the flashes to cool down before you can take another scan. This is shown by the progress bar at the bottom of the Viewfinder image.

Inspecting your scan

Good vs bad data

When reviewing a scan you may find some bad data that you want to remove.

Rotate the scan and locate the data you wish to remove. Bad data will visibly appear incorrect. It may appear raised, rough or overly smooth and generally will not be comparable to the subject which was scanned.



Bad data at the edges of a scan can be cropped out



Reflective objects, such as this spanner, may create problems where the surface reflects the flashes

This bad data is typically found around the edges of your scan or in areas which were not visible when acquiring the scan.

The mono-color view mode may help you identify which areas are bad.

This data may be removed using the cropping tool.

Spotting movement and lighting interference in your scans

Movement within scans can generate bad data. For example, you may see a 'noisy' scan occasionally (surface of scan will appear rough when it should be smooth), this can be attributed to movement either on the part of the operator of the scanner or the subject being scanned.

This can be solved by ensuring your subject and the operator remain still and may require retaking the scan.

Lighting interference can cause large spikes in the 3D model, or cuts through the data. This can be caused by background lighting, shiny or reflective objects that may be present in the scan area.

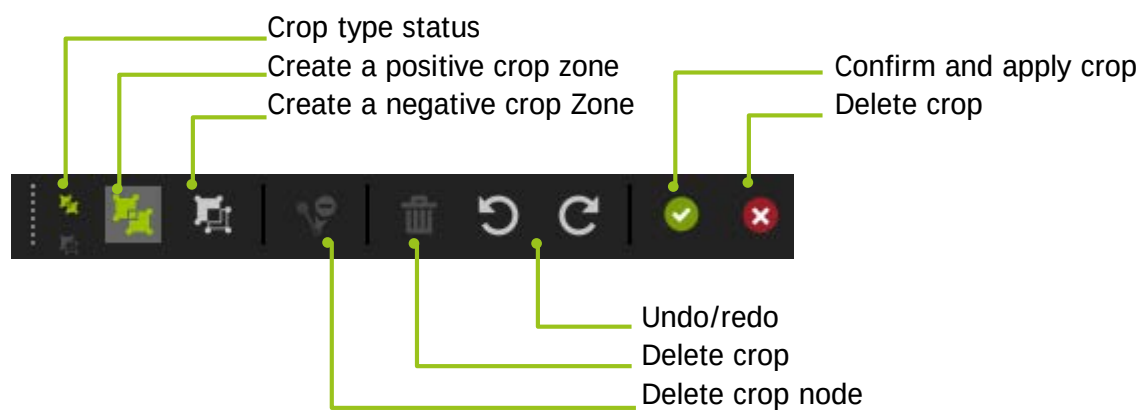
Cropping a scan



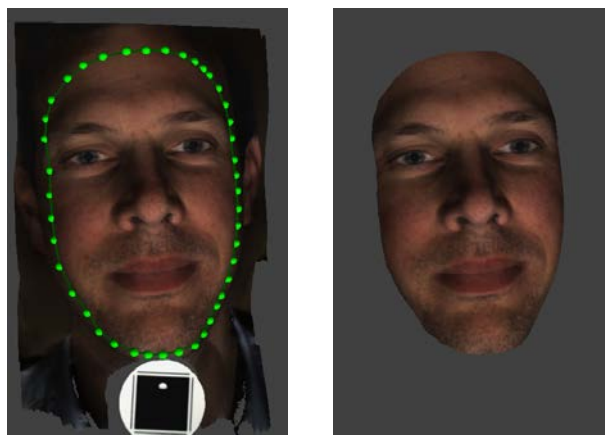
Select the cropping button to open the crop interface

Cropping allows you to place points on your scan to select the area you wish to keep or remove.

You can place a point by clicking a position on your scan. This creates a node. At least three nodes are required to create an area that can then be accepted as a crop but it is recommended to select more depending on what you are cropping.

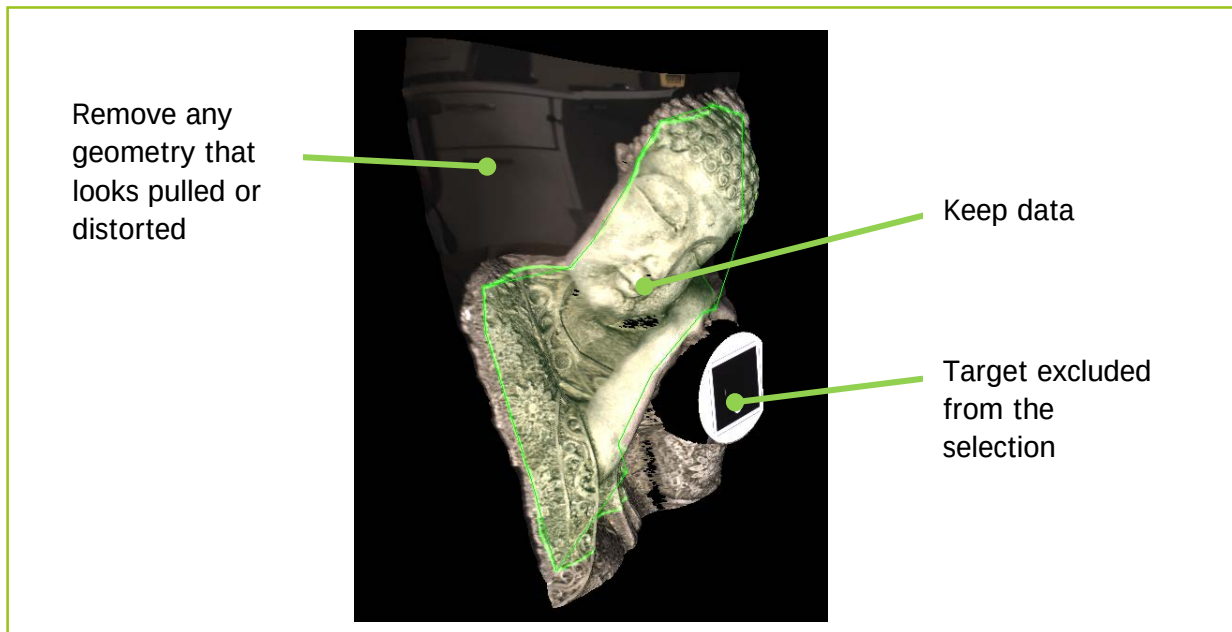


The more node points you have the less sharp the edges of the scan will appear; this is helpful when cropping something round, such as a face, as it allows you to keep the shape of the face.



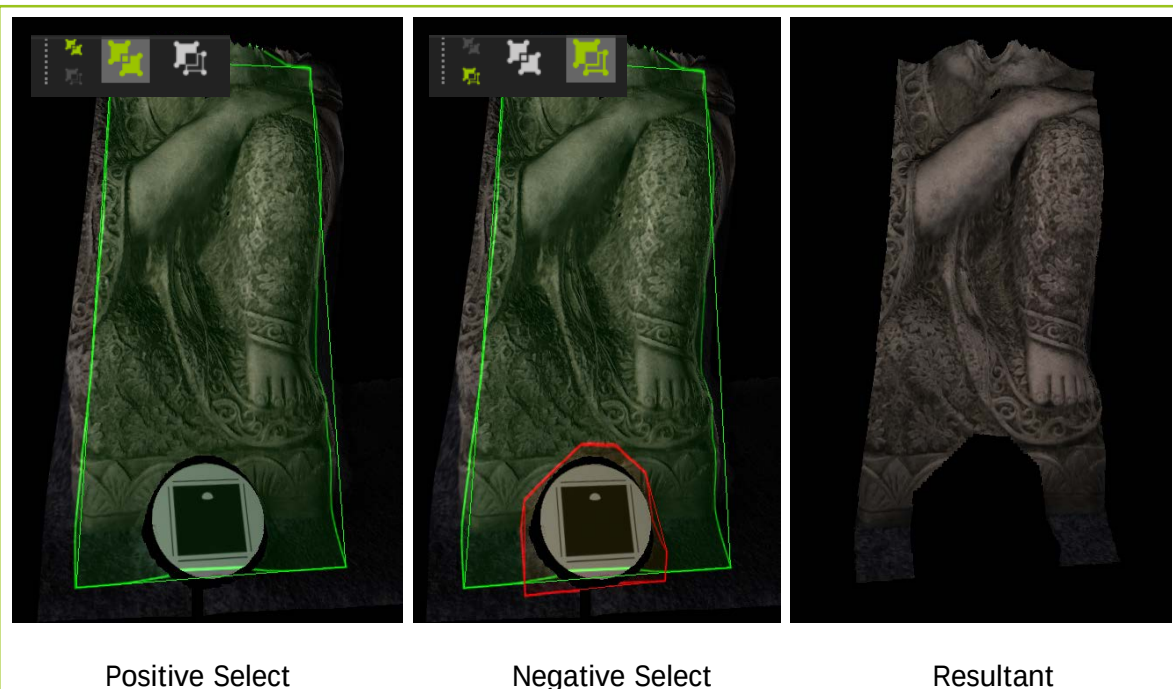
Cropping a scan

Cropping allows you to place points on your scan to select the area you wish to keep. See image below which clearly illustrates what's good and bad data. You need to remove the data that looks pulled or stretched in order to clearly see the pulled data put the scan into mono mode.



Positive and Negative Crop Zones

It is possible to create multiple crop zones shown as positive (green) and negative (red). Positive zones are what you wish to keep and negative are specific areas within a crop you wish to remove. You must always create a positive zone before a negative.



Note:

- Don't worry, your original scan data is saved and a crop can always be undone, even after the software is closed.

Exporting your scan

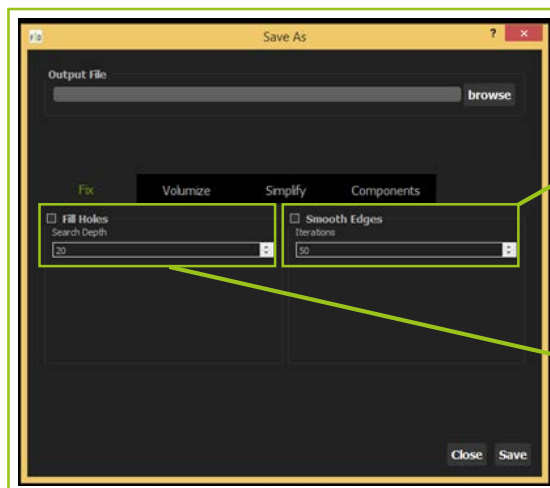
Your scan can be exported in three different file-types and to two different uploads:

- 1 STL: this will export your model without any color data. This can be useful if you're sending your model to a non-color 3D printer or for use in other 3D modelling software applications.
- 2 PLY: this will export your model with color. If you select the 'color' option it will export it as one file. The color information is stored per-vertex, therefore if you lower the polygon count of the model the color texture resolution will also be reduced.
- 3 OBJ: this will export your model with color as with PLY. However, it will export 3 files: object, material and bitmap files. The bitmap is overlaid on top of the model and so lowering the polygon count will not deteriorate the resolution of the color texture.
- 4 Publish with F3D: This will enable you to share your scan with the Fuel3D team for evaluation and guidance.
- 5 Sketchfab: This enables you to quickly upload a scan to the Sketchfab website www.sketchfab.com once it has been configured.



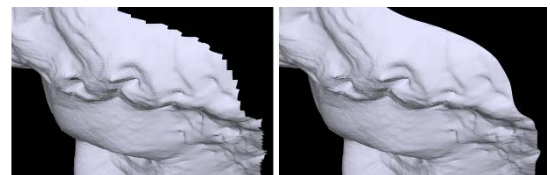
Save As Options

The save options are varied depending on the software license installed so not all options may be available to you.



Smooth Edges

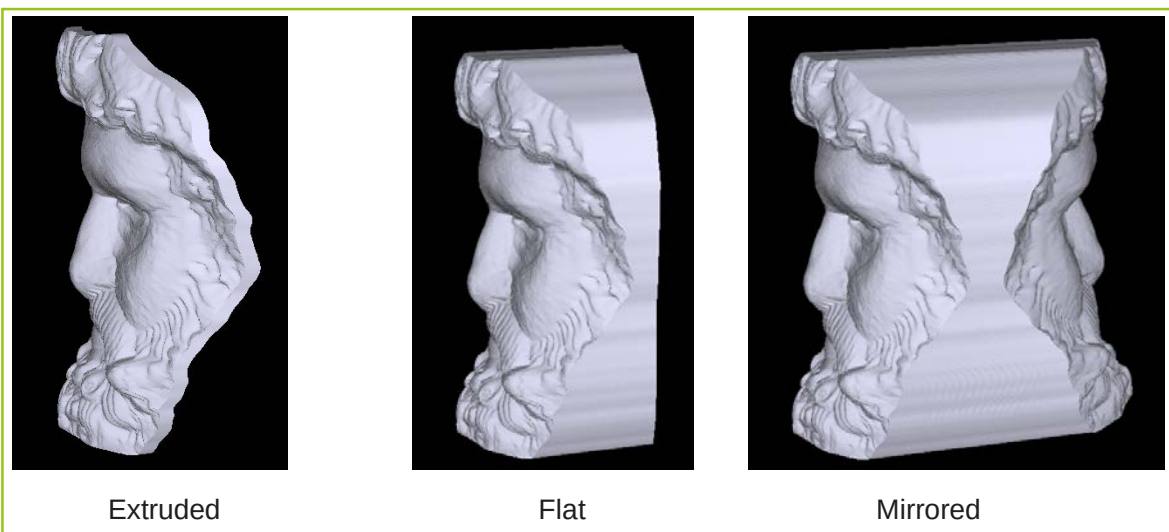
Iterations – This controls the quality of edge smoothing.



Fill Holes - This will fill totally enclosed holes found within the exported data set.

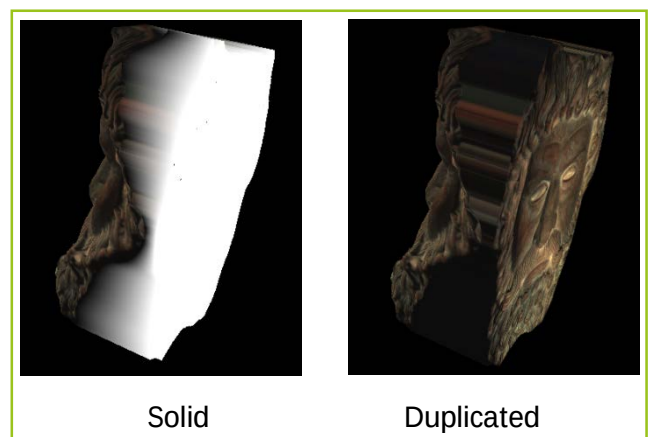
Search Depth - This filters the size of hole filled.

The Volumize option enables the rapid creation of closed data set suitable for 3D printing.



Color

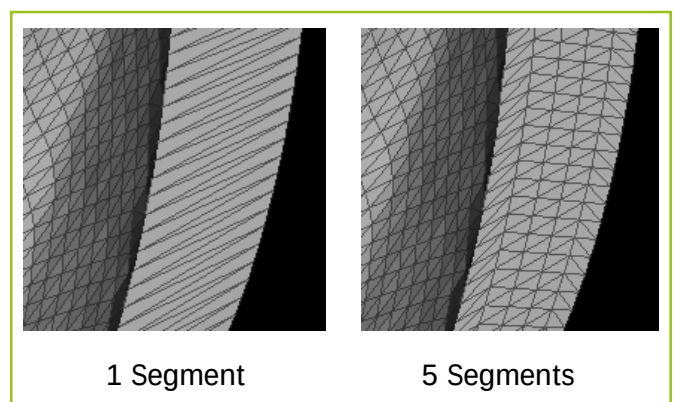
This enables the selection of either a mono color, in the example below white, or to duplicate the items color through the item.



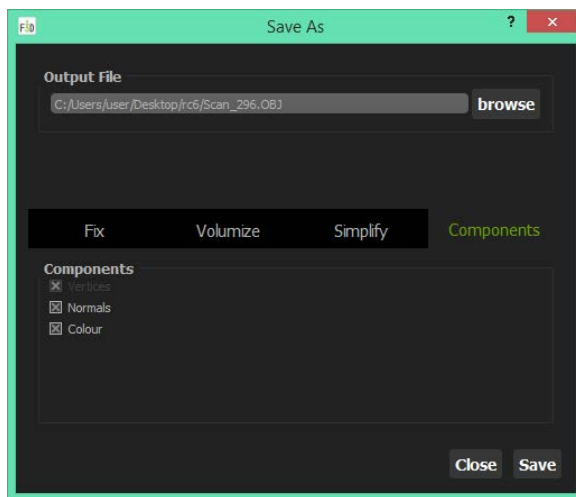
Volume Options

Thickness – relates to the minimum thickness of the item.

Segments – the number of surfaces to be generated when extruded.



Components



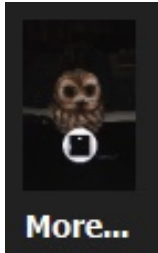
Depending on the type of file selected when saving, different options will be offered here. For example STL files contain no color information so the option to include this data is not enabled.

The options selected here are normally dictated by the downstream application the user is intending to use.



Troubleshooting

Failed Scans



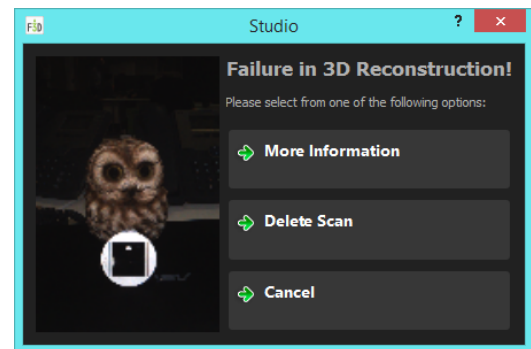
Scans can fail for a number of reasons. The system will highlight failed scans by putting the word More... under the preview image.

If you choose the scan you will then get a dialog that will enable you to explore why the scan failed or delete the scan.

More information will suggest possible reasons for the scans failure.

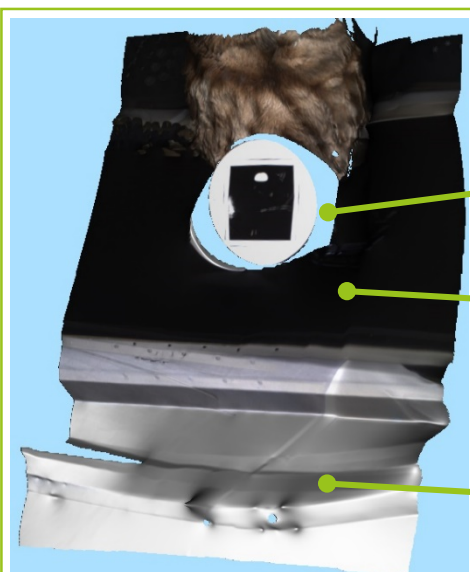
The primary reasons for the scan to fail are:

- The target cannot be found, normally this is due to the angle of the target, its slightly covered or on the very edge of the scan.
- The scanner moved during capture.
- Dirt on the lenses.
- A flash was covered during scanning.
- Lighting was incorrect or there was a reflective item in the scan.



If you have a failed scan you are given the options to either delete it and try again or upload a report to Fuel3D. There are two types of reports the full report includes the scan data. These reports help the Fuel3D support engineers to diagnose why the scan failed and advise you.

Sometimes the system will also offer to build the file but with errors.



Bad Target note the damage.

Black background absorbs the light.

Here, the white highly reflective desk reflect the light and cause the strange peaks and troughs.

An Example of a processed failed scan

Cuts in your scans

Cuts in your scans can be caused by a number of reasons:

- ❶ If there is a shiny or reflective object in the scan, such as jewellery.
- ❷ If there is bright lighting in the background, such as a light or bright window.
- ❸ If the subject is moving quickly whilst the scan is being taken.
- ❹ Very dark objects which the scanner struggles to illuminate.
- ❺ Bright objects which may reflect too much light.
- ❻ Very shiny hair can reflect the light.



Target troubleshooting

It is important to look-after your targets. They should be stored safely when not in use so that they are not bent or damaged.

Bending the targets will cause processing to fail and the viewfinder will be unable to track the target correctly.

Do not replicate the targets as this can cause issues with processing and may result in an inaccurately scaled model. You can order new targets from the Fuel3D website.

Inaccurate geometry

Inaccurate geometry is most likely the result of selecting an inappropriate subject. Please see the subject selection section to help guide you with selecting a suitable subject.

Workarounds

Workarounds may help scan subjects which may otherwise not scan correctly.

You may embed your subject in kinetic sand to leave an imprint. This imprint can then be scanned and cropped to produce a replica of the subject, much like making a cast.



You may also use non-permanent texture spray to coat your object with and then complete your scan. This spray will help to cover reflective surfaces which will improve the scan outputs.

Talcum powder may be used when the subject has very dark hair to improve the scan quality.

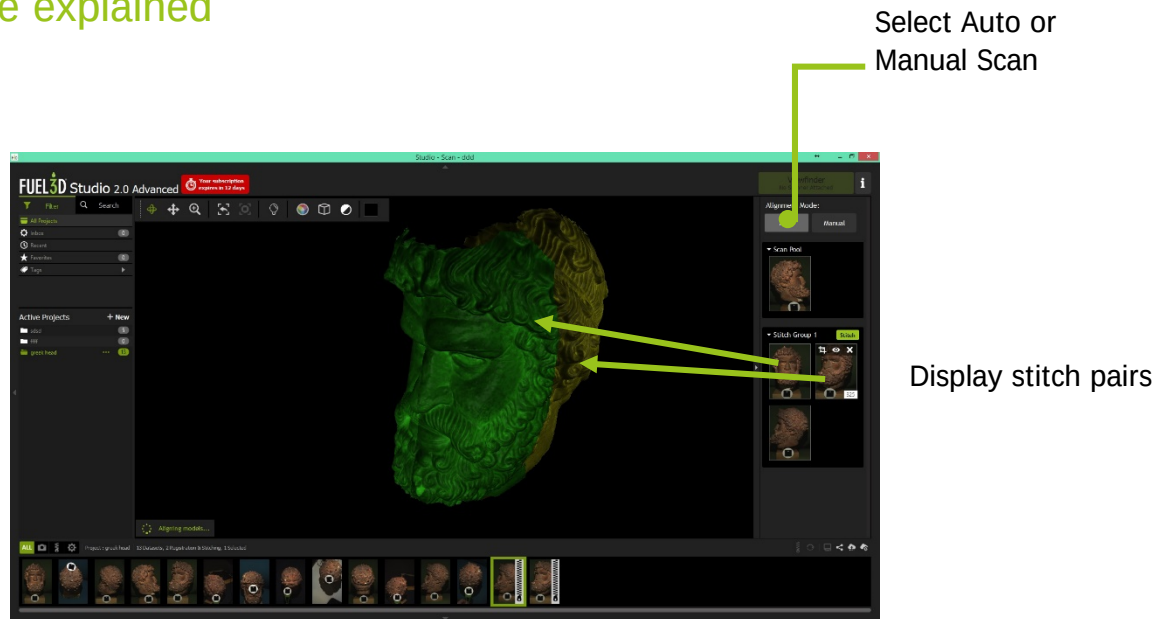


Note:

- For a full list of workarounds, instructions and issue troubleshooting please visit our FAQ at: [fuel3D.zendesk.com](https://fuel3d.zendesk.com).

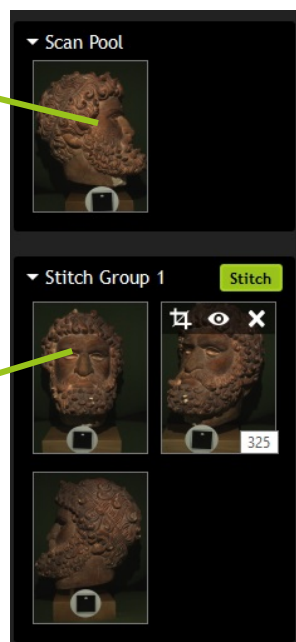
Stitching Overview

Interface explained



Available un-stitched scans

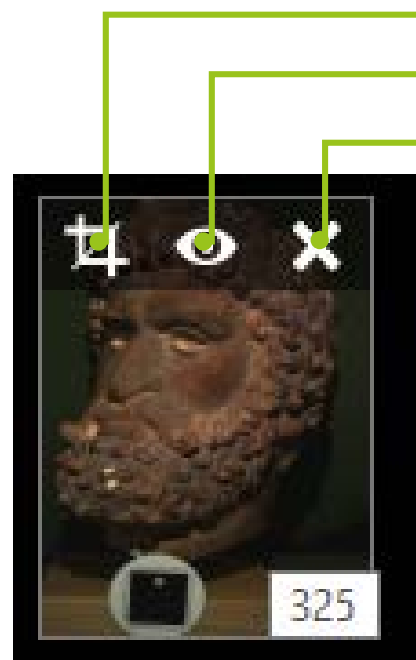
Scans Stitched together



Edit Crop

Show / Hide

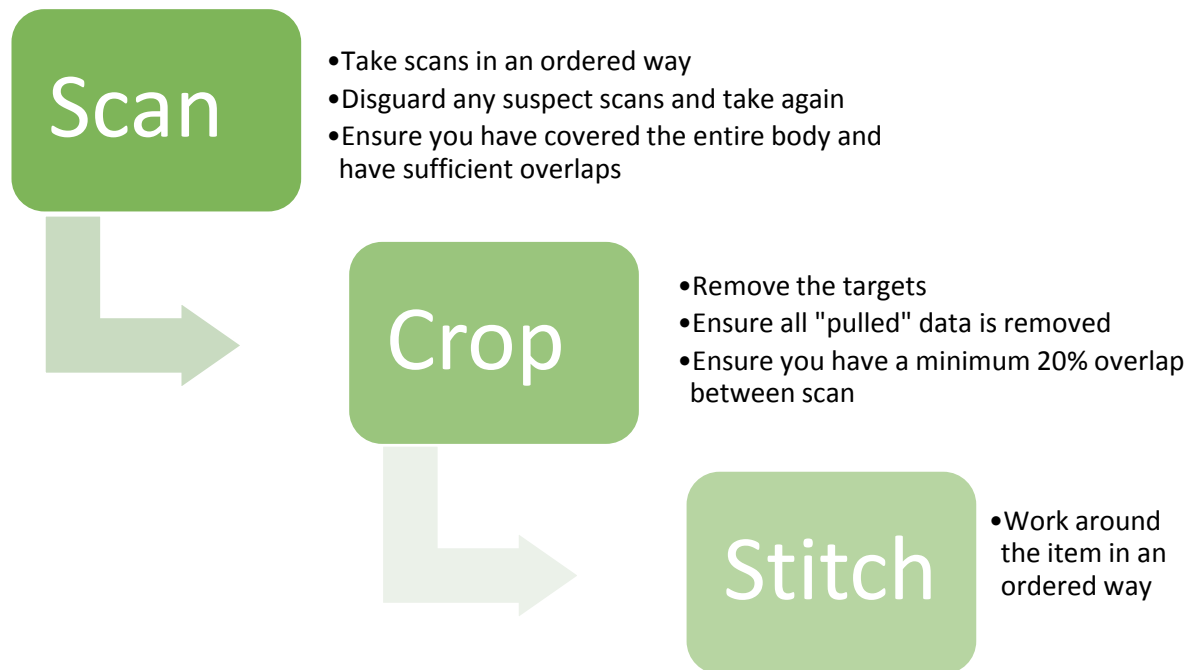
Delete from Stitch Group or Scan Pool



Stitching the Process

Successful stitching relies primarily on three factors:

- Good Quality Scans
- Correctly Cropped Scans
- Ordered Alignment of the Scans



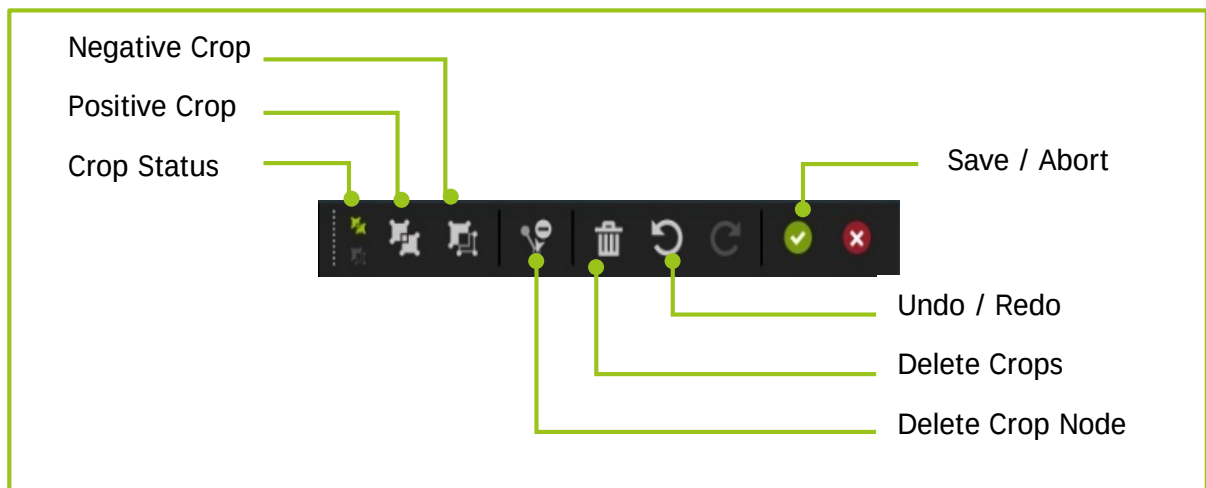
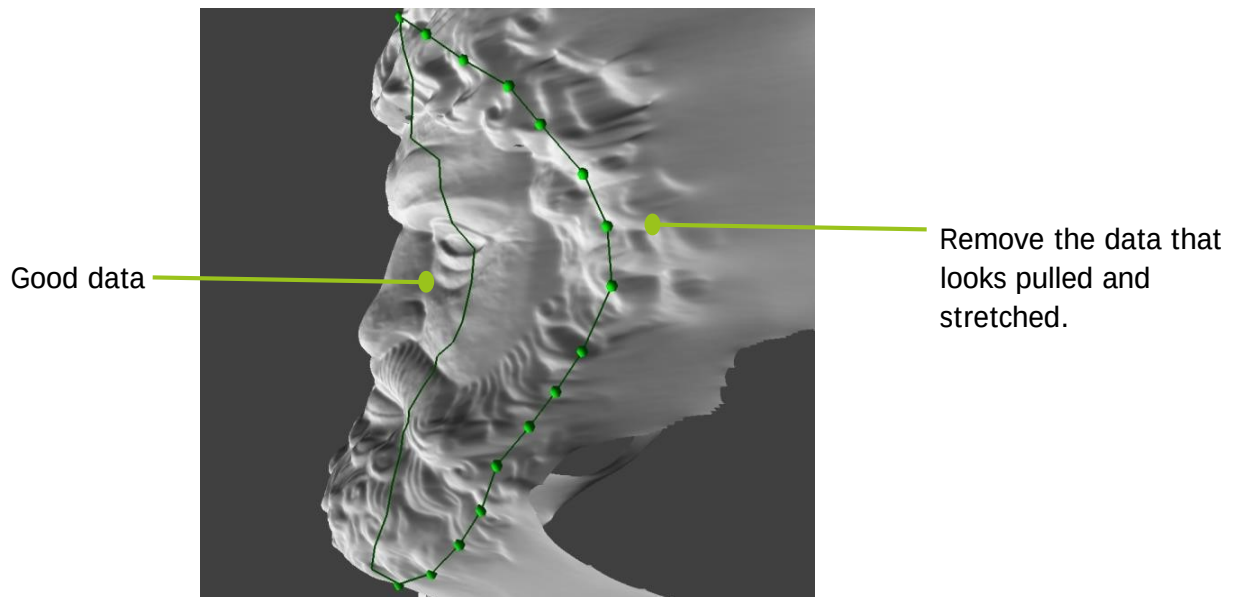
Cropping:

It is generally best to prepare your scan data prior to trying to stitch it together. This speeds up the stitching process and keeps it simpler.



Select the Cropping button to open the crop interface

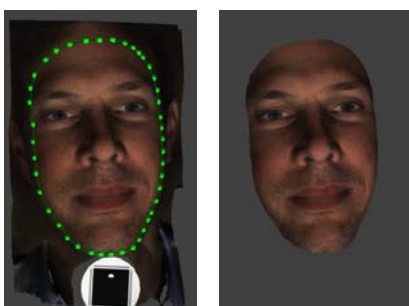
Cropping allows you to place points on your scan to select the area you wish to keep. See image below which clearly illustrates what's good and bad data. You need to remove the data that looks pulled or stretched, in order to clearly see the pulled data put the scan into monochrome mode.



You can place a point by clicking a position on your scan. This creates a node. At least three nodes are required to create an area that can then be accepted as a crop but it is recommended to select more depending on what you are cropping.

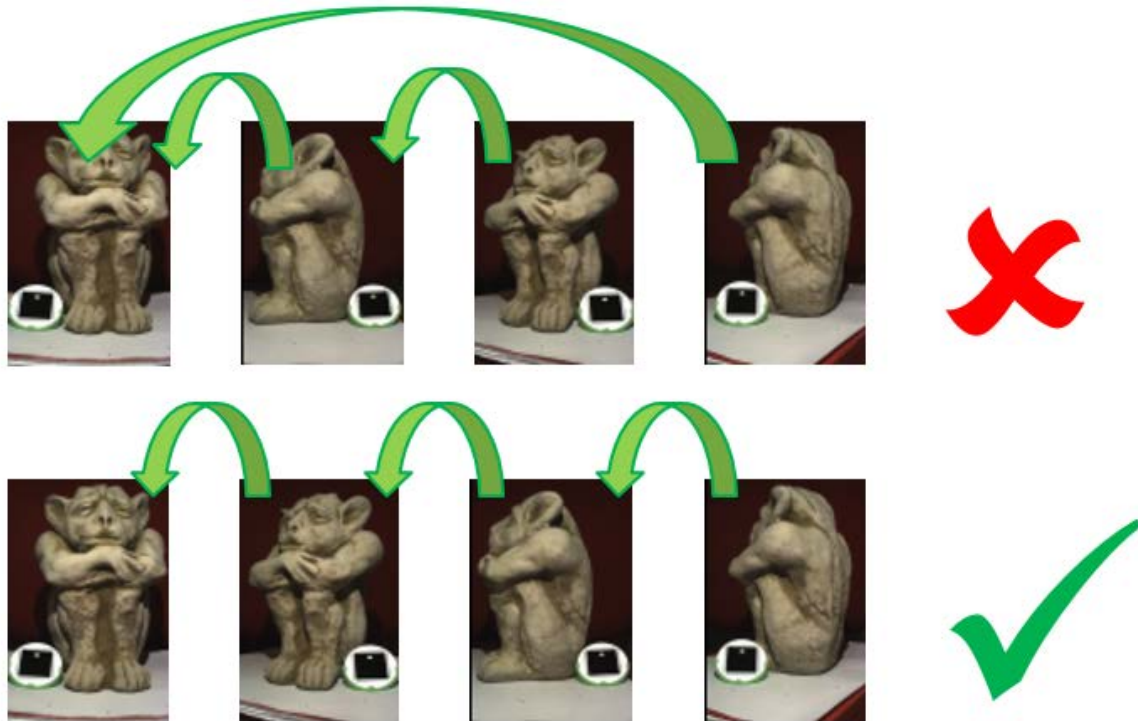
The more node points you have, the less sharp the edges of the scan will appear; this is helpful when cropping something round, such as a face to help keep the shape of the face.

When stitching multiple scans together there needs to be a minimum of 25% overlap between scans. This is to ensure you get a successful alignment.



Ordering

To successfully stitch items together you need to work in an ordered manner working around the object or person. It is generally best to start with two items stitch them, add another item to the stitch set, stitch this and continue.



Creating a Stitch Group

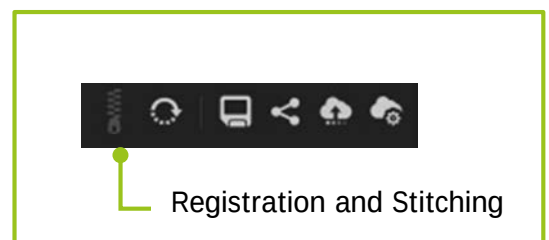
To create a stitch group you need at least two scans selected. Choose and load your first scan into the viewer and then control select a scan you wish to join to it. Both will highlight then either drag the selected items into the graphics window or the registration and stitching icon.

You will then be prompted to name the stitching item.

The Scan pool will now appear on the right of the interface. At this time the items are not joined.

You can add additional items by dragging them into the graphics area or the graphics area.

You will see the Stitch in the scan manager highlighted with a zipper symbol.



Creating an Automatic Stitch.



Ensure the Auto mode is selected then in the stitch interface then drag and drop on scan onto the other. The system will process the scans and “roughly align them” and create a stitch group. To add to this stitch group simply select another scan and drag and drop it onto the next logical scan.

Simply work around the item stitching together the scans. If a scan fails to align correctly check there is sufficient overlap and there is not any surplus geometry.

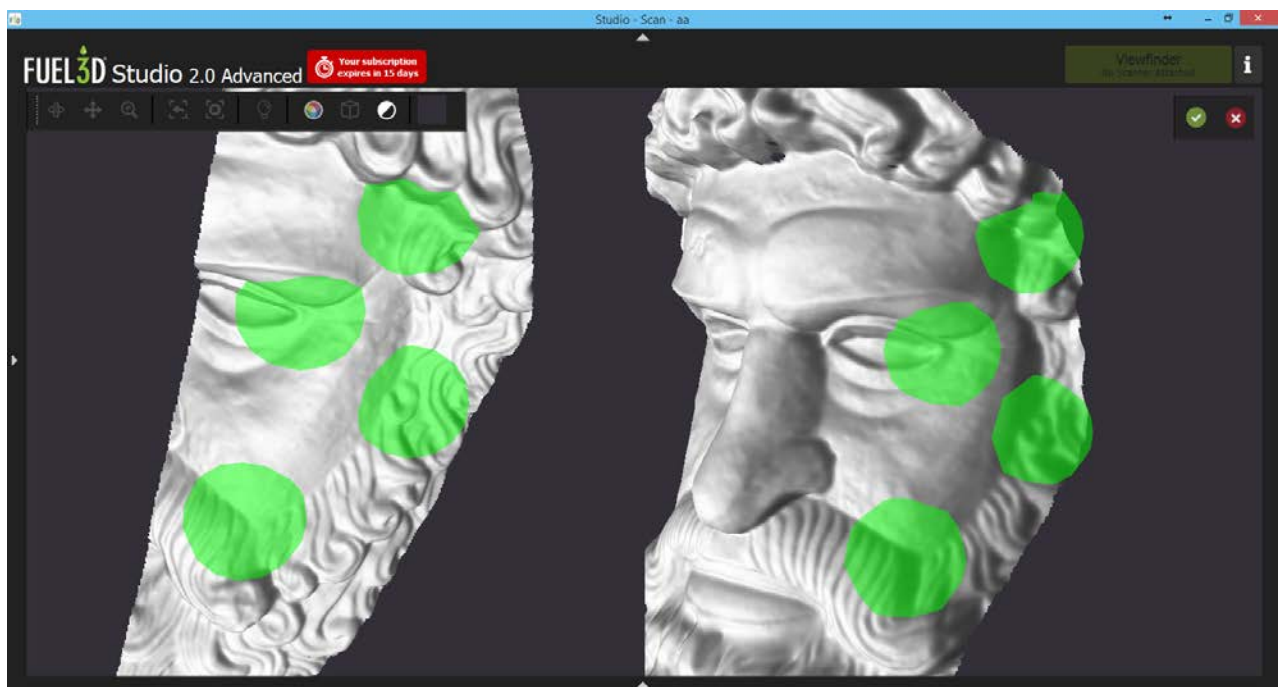


Note:

- You can use the trim icon to adjust the trimming of the scans during stitching

Creating a Manual Stitch

If automatic stitching does not give the results you require you can switch to manual stitching. This still requires you to drag and drop the scans over each other but will then present the user with both the selected scans. It is then left to the user to select matching areas on the scans, a minimum of three areas are required but we would recommend four or more.



Note:

- When selecting areas to use for alignment, choose areas with consistent detail.

Completing the Stitch

Once you are happy with the alignment of the stitch group and you have all the items you wish to stitch together it is recommended you review the data and adjust any trims that have disconnected data.



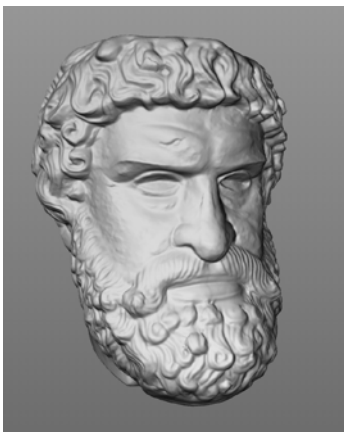
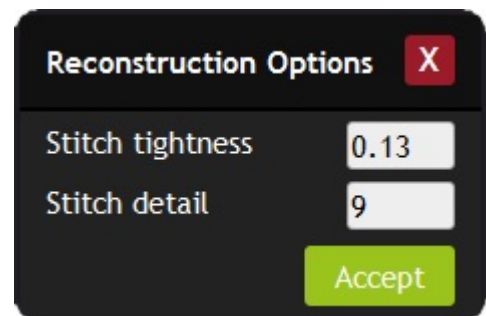
Choose the stitch icon to commit the stitch. This will begin the Fine refinement processing of the stitch and you will see the scans jump into a more accurate alignment.

Once the fine alignment is complete you will then be asked how you wish to complete the stitch using the reconstruction options.

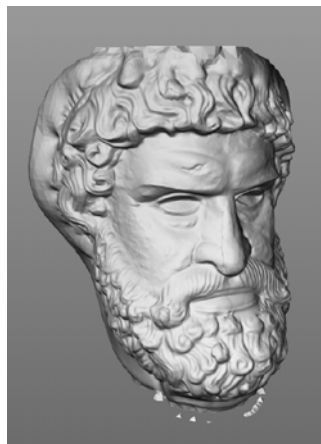
Stitch tightness

Affects the smoothness of the overlaps between each scan. It also has an effect on the volumization. A lower value will result in a volumization that displays closer in appearance to the original alignment. Scarring appears less pronounced with a lower value.

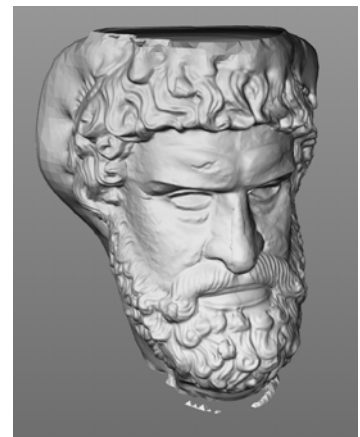
A higher value causes the volumization to appear larger. In the cases below, at 0.5 and 1, anomalies have appeared across the model.



Stitch Tightness 0



Stitch Tightness 0.5



Stitch Tightness 1



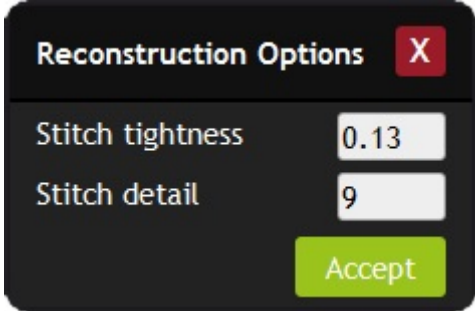
• Hint : Use a value between 0.1 and 0.2 for Stitch Tightness for the best results

Stitch Detail

The depth to which the model is analysed and recreated. A lower detail value will result in a less detailed reconstruction.

Increasing the value also increases processing time.

A lower value can lower the appearance of scarring and also the size of the output model.

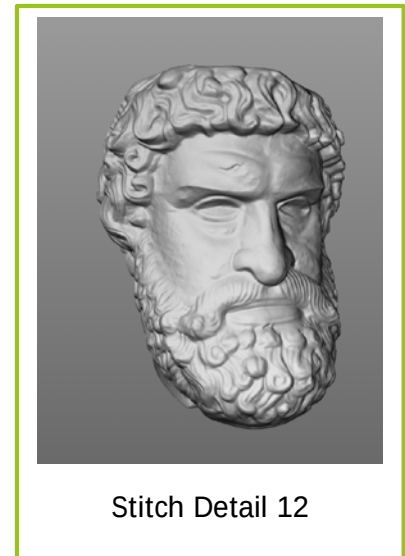
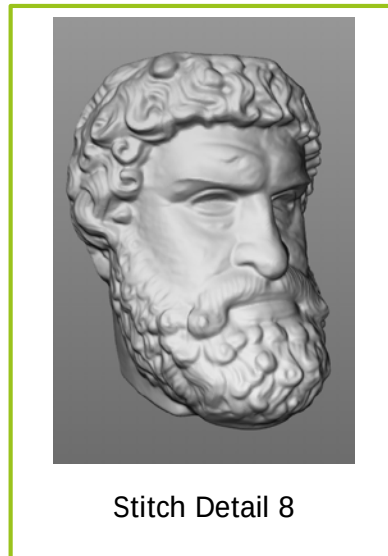
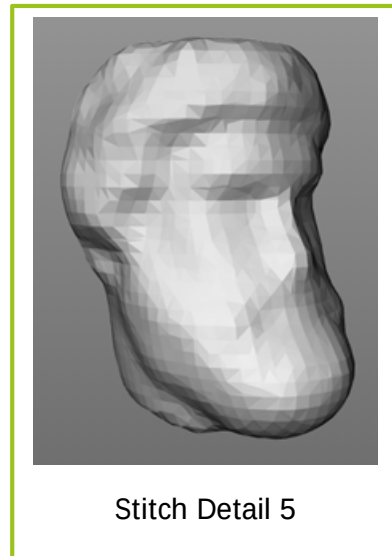
A dark-themed dialog box titled "Reconstruction Options" with a red close button (X) in the top right corner. It contains two input fields: "Stitch tightness" with the value "0.13" and "Stitch detail" with the value "9". At the bottom right is a green "Accept" button.

Reconstruction Options X

Stitch tightness 0.13

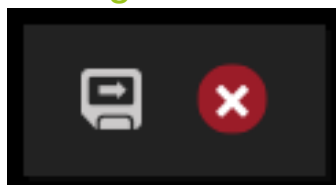
Stitch detail 9

Accept



- **Hint : Use a value of 9 for Stitch Detail is a good compromise between quality and speed. Higher values significantly increase processing time.**

Saving the Stitch



The final operation is to export the stitched data. This can be saved as STL, PLY or OBJ data. Choosing the Floppy disk icon will save the Stitch and the red x icon will abort the stitch.

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